

Service Guide Book

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1. OYL Product Model Name Description

Description	Generic Model Name	McQuay Brand
Wall Mounted Fan Coil Unit	WM	MWM
Wall Mounted Inverter Fan Coil Unit	WMV	MWMV
Ceiling Exposed Fan Coil Unit	CE	MCM
Ceiling Cassette Fan Coil Unit	CK	MCK
Ceiling Concealed Fan Coil Unit	CC	MCC
Ducted Split Blower unit	SB	MDB
Chilled Water Fan Coil Unit	CW	MCW
Air Cooled Mini Chiller	AC / 4AC	MAC / M4AC
Single Split Condensing Unit	SL / 4SL	MLC / M4LC
Single Split Inverter Condensing Unit	SLV / 5SLX	MLCV / M5LCX
Modular Split Condensing Split	MSS / 4MSS	MMC / M4MC
Multi Split Series	MSD / 4MSD MST / 4MST MSH	MMSD / M4MSD MMST / M4MST MMSH
Horizontal Condensing Unit	HDC	MHDC
Vertical Condensing Unit	VCU	MVCU
Air Cooled Roof Top Packaged Air Conditioner	RT / 4RT	MRT / M4RT

Product Nomenclature

e.g.

X 4 WM V 10 F R N - XXXX
1 2 3 4 5 6 7 8 9

1. Brand name; e.g. M = McQuay
2. Type of refrigerant; 4=R407C; 5=R410A; Omitted if R22
3. Range of product
4. System; V=Inverter; S=Multi Split; Omitted if normal system
5. Capacity; e.g. 10 = 9,000 Btu/hr
6. Generation or Series
7. R for heatpump model;
W for Chilled water model ;
Omitted if for cooling model only.
8. Type of application for chilled water fan coil unit;
N=Valveless application, Omitted if valve application
9. Product nomenclature

Ceiling Cassette Front Panel

e.g.

X PL CK A R - XXX
1 2 3 4 5 6

1. Brand name; e.g. M = McQuay
2. PL = front panel
3. CK = ceiling cassette unit
4. Series; A = A series; B = B series
5. Model; R = heatpump; W=chilled water; Omitted if cooling model only
6. Type of handset / specification

2. Conversion Table

(1) COOLING CAPACITY

Btu/Hr	MBH	kCal/Hr	kW
1	0.001	0.252	0.293×10^{-3}
1000	1	252	0.293
3.968	0.004	1	1.162×10^{-3}
3412	3.412	860.04	1

(2) PRESSURE

psi	kg/cm ²	W.G.		Pascal (pa)
		(in.)	(ft.)	
1	0.07	27.7	2.309	0.69×10^4
14.22	1	394.08	32.84	9.81×10^4
3.61×10^{-2}	2.538×10^{-3}	1	0.083	248.84
1.45×10^{-4}	0.1×10^{-4}	0.004	3.349×10^{-4}	1

(3) FLOW RATE

L/s	m ³ /hr	m ³ /s	U.S. GPM	CFM
1	3.6	0.001	15.85	2.119
0.278	1	0.278×10^{-3}	4.403	0.588
1000	3600	1	15850	2119
0.063	0.227	0.063×10^{-3}	1	0.1337
0.472	1.7	0.472×10^{-3}	7.481	1

(4) TEMPERATURE

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

$$^{\circ}\text{C} = \frac{^{\circ}\text{F} - 32}{1.8}$$

(5) VELOCITY

fps	m/s	fpm
1	0.305	60
3.281	1	196.9
0.017	0.005	1

(6) VOLUME

L	m ³	U.S. G.P.M.	ft ³
1	0.001	0.264	0.0353
1000	1	264	35.3
3.785	3.785×10^{-3}	1	0.134
28.315	0.028	7.48	1

(7) AREA

in ²	ft ²	m ²	cm ²
1	6.94×10^{-3}	6.452×10^{-4}	6.452
144	1	0.093	929.03
1550.06	10.764	1	1×10^4
0.155	1.076×10^{-3}	1×10^{-4}	1

3. Product Mainboard vs. Handset Matrix

Type	No.	Main Board (IC)	D2.0	U1.4	Mechanical (PAC204RC)	U1_SBI25 (SQ1.0)	SQCH	VA1.0	*MS10.0	Handset	
DX Unit		Model								Standard	Optional
1.		WM-F Series									
		Cooling	✓							G7	-
		Heatpump		✓						G7	SLM3 + AC5300/Netware2
		WMS - F/FR									
		Cooling	✓							G7	-
		Heatpump							✓	G7	-
		WMV series									
		Heatpump								G7 Turbo	-
		CE - D series						✓			
		Cooling		✓						G7	SLM3 + AC5300/Netware2
2.		Heatpump		✓						G7	SLM3 + AC5300/Netware2
		CK - A series									
		Cooling		✓						G7	SLM3 + AC5300/Netware2
		Heatpump		✓						G7	SLM3 + AC5300/Netware2
		CK - B series									
		Cooling		✓						G7	SLM3 / AC5300
		Heatpump		✓						G7	SLM3 / AC5300
		CC - C series									
		Cooling		✓						SLM3	-
		Heatpump		✓						SLM3	-
3.		SB - B/C series									
		Cooling & Heatpump									
		SB75B/BR - 100B/BR, 125B				✓				SLM3	-
		SB125C/CR - 150C/CR				✓				SLM3	-
		SB150B2/BR2 - 600B4/BR4					✓			Sequential LCD	-
		SB - D series									
		Cooling & Heatpump									
		SB75D/DR - 100D/DR				✓				SLM3	-
		SB125D/DR - 150D/DR				✓				SLM3	-
		SB150D2/DR2 - 500D4/DR4					✓			Sequential LCD	-
4.		RT series									
		Cooling & Heatpump									
		RT80/100 A/AR			✓					PAC204RC	-
		RT150/200/250/300 A/AR					✓			Sequential LCD	-
		RT60/80/100/120 A/AR				✓				SLM	-

Type	No.	Main Board (IC)		W1V2	W1V3	SZMC01	MCH03	Handset	
		Model						Standard	Optional
Mini Chiller	11.	AC - A and B Series							
		Cooling			✓			-	-
		Heatpump			✓			-	-
	12.	AC - C Series					✓	Smart Manager	-
		Cooling					✓	Smart Manager	-
		Heatpump							
Chilled Water FCU	13.	WM -FW			✓			G6	SLM / Netware2
	14.	CK - AW			✓			G6	SLM / Netware2
	15.	CE - DW			✓			G6	SLM / Netware2
	16.	CC - CW			✓			SLM / Netware2	-
	17.	SB - BW			✓			Without controller	-

4. OYLM PC BOARD DEVELOPMENT HISTORY

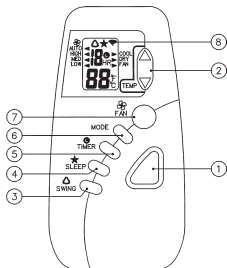
YEAR	MAIN BOARD	HANDSET		MODEL		REMARKS
		WIRELESS	WIRED	COOLING	HEATPUMP	
1996	Challenger 2.1 & 2.2	G3	-	WM 10/15 D WM 20/25 C	WM 10/15 DR WM 20/25 CR	Copper sensor
1996	Challenger 2.2	G3	-	WM 07/10 E	-	Copper sensor
1997	Challenger 2.4	G3 & G6	-	WM 10/15 D WM 20/25 C	WM 10/15 DR WM 20/25 CR	
1998	Challenger 2.4	G3 & G6	-	-	WM 07/10 ER WM 10/15 FR	
1998	Challenger 5	G3 G6	-	WM 07/10 E WM 10/15 F	-	
1999	Challenger C3A Challenger C3B Challenger C3B	G3 & G6	SLM2 (10 core wire)	CK-A CE-C/CE-D CC-B/MSB/HSB	CK-AR CE-CR/CE-DR CC-R/MSB-R/HSB-R	
2000	Mini Chiller MCH01	-	-	AC (40-125) B	AC (40-125) BR	Cooling & Heatpump
2001	Chilled water W1V2	G6	Netware-1	WM-FW/CE-DW/CC-CW/CK-AW/HSB-BW	SB (150-500) BR	Convertible PCB
2001	Sequential Controller	-	Sequential Controller	SB (150-500) B	SB (150-500) BR	Multiple compressor
2001	Universal Board D1.0 U1.3 U1.4	G6 G6 G6	- - SLM3 (4 core wire)	WM (10-25) F CE-D/CK-A/ CC-C	- WM (10-25) FR CE-DR/CC-CR/ CK-AR	Cooling only Heatpump only Cooling & heatpump
2001	D2.0 Mini chiller SZMC01	G6 / G7 -	- -	WM (10-25) F AC/AAC (40-58)A, AC4AC75-125B	- AC/AAC (40-58)AR, AC4AC75-125BR	Cooling only Cooling & heatpump
2001	Inverter VA1.9 (Indoor) VB1.0 (Outdoor)	G7 Turbo	-		WMV10FR SLV10BR	In set for only
2002	Sequential controller	-	Sequential controller SQ-LCD	SB (150-500)D	SB (150-500)DR	Multiple compressor
2002	D2.0 U1.4	G7 G7	- SLM3 / Netware2 (optional)	WM30F CK(15/20/25/30)B	- WM(10-25)FR; WM30FR CK(15/20/25/30)B	Cooling only Heatpump only Cooling & heatpump
2002	Chilled water W1V3	G6	SLM3 / Netware2 (optional)	WM-FW/CE-DW/CC-CW/CK-AW/CK-BW		Valveless Application only
2002	Multi Split Indoor, M/S10.0	G7	-	-	WMS(10-20)FR	Auto Random Restart
2003	Mini chiller MCH03A	-	SC302	AC4AC(80/100/120/150)C SB(125/150)B1C1/D1	AC4AC(80/100/120/150)CR SB(125/150)BR1C1/DR1	Cooling & heatpump
2003	Universal U1SB125	-	SLM3 Single speed	RT/4RT(60/80/100/120)A	RT/4RT(60/80/100/120)AR	Cooling & heatpump
2003	Sequential Controller, SQ	-	SQ-LCD	RT/4RT(150/200/250/300)A	RT/4RT(150/200/250/300)A	Cooling & heatpump

REMOTE CONTROLLER VS PC BOARD CONFIGURATION

Handset	Communicate with	Main Board										
		OMC - 03	SongJia	Jia Lih	C2	C3	C5	D1.0	U1.3	U1.4	W1V2	W1V3
Wireless												
Black Transmisor	=	X	X	X								
V1	=	X	X	X								
V2	=	X	X	X	X	X						
G2 (V1 Code)	=	X	X	X								
G2 (G2 Code)	=			X	X	X						
G3 (V2 Code)	=	X	X	X	X	X						
G3 (G3 Code)	=				X	X						
G6 (V2 Code)	=					X	X	X	X	X	X	X
G7 (G2 Code)	=					X	X	X	X	X	X	X
Wired												
OMC-04	=	X										
SLM (7 Wire)	=	X										
SLM2 (10 Wire)	=					X						
SLM3 (4 Wire)	=								X			
Netware 1	=										X	
Netware 2	=								X			X

5. Handset Operating Guide

G6 Remote Control



1 - ON / OFF SWITCH

- Press to start the air conditioner unit
- Press again to stop the unit
- Blue color - Cooling only
- Pink color - Heatpump
- Red color - Chilled Water Heatpump (No auto mode)

2 - TEMPERATURE SETTING

- Set the desire room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C setting (60°F to 80°F)(Optional setting from 20°C to 30°C).
- Press ▲ or ▼ button simultaneously will toggle the temperature setting between °C and °F.

3 - AUTOMATIC AIR SWING

- Press the button to activate the automatic air swing function. The swing angle ranging from horizontal to 25° to bottom.

4 - SLEEP MODE

- Press the button to activate sleep mode. This mode can only be activated while in cooling or heating mode operation. If it is activated in "COOL" mode, the set temperature will be increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours.
- When the unit is operating under heating mode, the set temperature is decreased by 1°C after the first half an hour, 2°C after the second half an hour and total of 3°C after the following 1 hour. This function will prevent night sweat during summer season.

5 - TIMER SETTING

- Press set button to activate the timer setting (from 1 hour to 15 hour) of the air conditioning unit. It will be in "On" or "Off" condition after the set time depending to the current condition (either from "On" to Off" or vise-versa)
- To cancel the timer setting, press the button continuously until the timer display goes off.

6 - OPERATING MODES

- Press the "mode" button for select the type of operating mode.
- Cooling only unit:
Cool → Dry → Fan.
- Heatpump unit :
Cool → Dry → Fan → Heat.

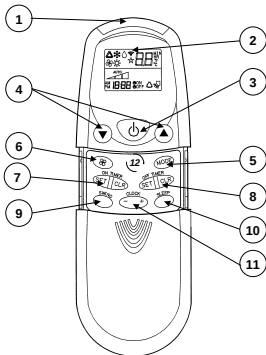
7 - FAN SPEED AND VENTILATION MODE SELECTION

- Press the button until the desired fan speed is achieved.

8 - SIGNAL TRANSMISSION INDICATION

- Blink to confirm the last setting has been send to the unit.

G7 Controller



1. Transmission source

- The source where the signal will be transmitted.

2. Signal Transmission indication

- Blink to confirm the last setting has been send to the unit.

3. On/Off Button

- Press once to start the air conditioner.
- Press again to stop the unit.

4. Temperature setting

- To set the desired room temperature, press the button to increase or decrease the set temperature.
- The temperature setting range is from 16°C to 30°C (Optional setting 18°C to 30°C).
- Press both buttons simultaneously to toggle the temperature setting between °C and °F.

5. Operation mode

- Press the MODE button to select the type of operating mode.
- For cooling only unit, the available modes are : COOL, DRY & FAN.
- For heat pump unit, the available modes are : AUTO, COOL, DRY, FAN & HEAT.

6. Fan speed selection

- Press the button until the desired fan speed is achieved.

7. ON timer setting

- Press the SET button will activate the on timer function.
- Set the desired on time by pressing the SET button continuously. If the timer is set to 7.30am, the air conditioner will turn on at 7.30am sharp.
- Press the CLR button to cancel the on timer setting.

8. OFF timer setting

- Press the SET button will activate the off timer function.
- Set the desired off time by pressing the SET button continuously.
- Press the CLR button to cancel the off timer setting.

9. Automatic air swing

- Press the SWING button to activate the automatic air swing function.
- To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

10. Sleep mode setting

- Press the button to activate sleep mode. This function is available under COOL, HEAT & AUTO mode.
- When it is activated in COOL mode, the set temperature will be increased 0.5°C after 30mins, 1°C after 1 hour and 2°C after 2 hours.
- When it is activated in HEAT mode, the set temperature will be decreased 1°C after 30mins, 2°C after 1 hour and 3°C after 2 hours.

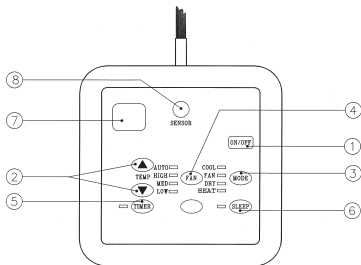
11. Clock time setting

- Press button + or – to increase or decrease the clock time.

12. Turbo function (optional – only applicable to inverter unit)

- Press button for fast cooling or heating operation.
- The temperature will be increased internally if it is in the HEAT mode, decreased if in COOL or DRY mode. Fan speed will be increased if it is not at maximum speed.
- The temperature & fan speed will resume to user setting if the button is pressed again or after 20mins.
- Available under HEAT, COOL & DRY modes only.

SLM3 Controller



SLM

1 - "ON/OFF" switch

- Press to start the air conditioner unit.
- Press again to stop the unit.

2 - Temperature setting

- Set the desired room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C (60°F to 80°F).

3 - Operation Modes

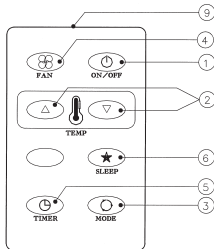
- Press the "mode" button for select the type of operating mode.
 - Cooling Only :
COOL, DRY, FAN
 - Heat Pump :
AUTO, COOL, DRY, HEAT, FAN
(AUTO mode is represented by both COOL and HEAT LED light on)

4 - Fan Speed selection.

- Press the button until the desired fan speed is achieved.

5 - Timer.

- Press the set button to select the switch timer of the air conditioner unit (the setting range is between 1 to 15hours).



AC-5300 (OPTIONAL)

6 - "Sleep" mode

- Press button to activate the sleep function. This function can only be activated under "cool" or heating mode operation. When it is activated under "cool" mode operation, the set temperature will increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours. If it is activated under "HEAT" mode operation, the set temperature will be decreased 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours.

7 - Air Swing

- Press button to activate the automatic air swing function.

8 - Sensor

- Infra red sensor to receive signals from wireless controller.

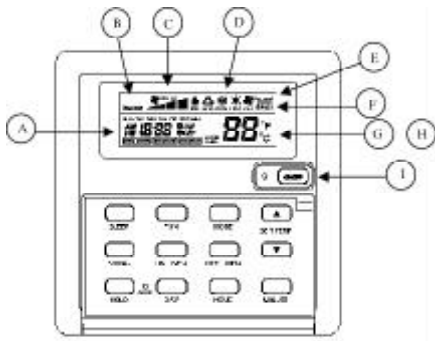
9 - LED display

- To display the set temperature (in °C) and timer delay setting (in hours).

10 - Transmission source

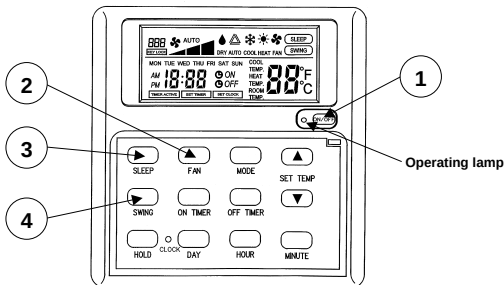
- To transmit signals to the air conditioner.

Network 1 and Network 2 Controller



- A - [Current time, Start / Stop Time] Display
Display the current time as well the start & stop time programmed
- B - [Key Lock] Display
Display indicates when the key lock function is activated
- C - [Fan Speed] Display
Display the fan speed setting. [Auto/High/Medium/Low]
- D - [Operation Mode] Display
Display the current mode of operation
- E - [Sleep] Display
Display the sleep/energy saving status
- F - [Swing] Display
Display the air swing status
- G - [°C or °F] Display
Display the temperature in °C or °F
- H - [Set temperature or room temperature] Display
Display the set or room temperature
- I - [On/Off Status] Display
Display the status of operation
- J - [Error] Display (Applicable for Network 2 only)
Display the status of any abnormality

1. ON / OFF



① ON/OFF button

Starting operation

When the unit is turned off, press the [ON/OFF] button. The operation LED lights and the unit is turned on.

Stopping operation

When the unit is turned on, press the [ON/OFF] button. The operation LED is extinguished and control are turned off.

② Fan

- Press FAN button to select Auto, High, Medium or Low fan speed.

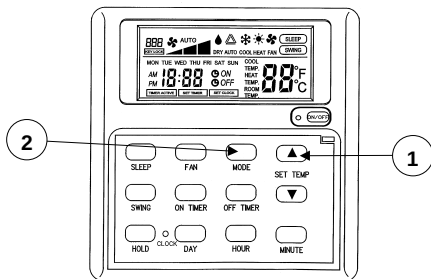
③ Sleep

- Press SLEEP button to activate the sleep mode or energy saving mode.

④ Swing

- Press SWING button to activate the air sweep function.

2. Operation selection and Room temperature adjustment



① Press the temperature button and set the temperature of your choice. By pressing the ▲ or ▼ once, temperature changes by 1°C [or 1°F]

Temperature can be set within the range 16°C ~ 30°C or 61°F ~ 86°F.

During fan mode, temperature can not be set.

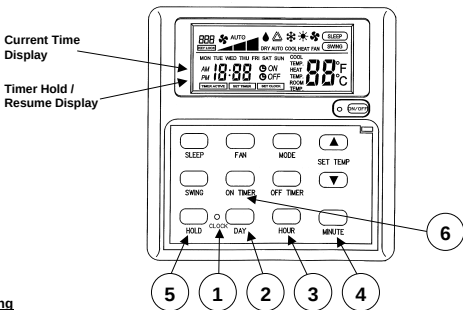
Normally the panel will show room temperature.

① Press ▲ and ▼ together, the unit of temperature will change from °C to °F and vice-versa.

② Mode button

Press the [MODE] button to switch operation from Cool, Heat, Auto, Dry, Fan. Check the display to see in which mode the control is set.

3. Time setting



Time Setting

① Clock Key

- Press the key once to set the clock mode. Press the key again to disable the clock mode.

⑥ 7-day Timer Key

- The timer can be turned on or off by pressing the timer on or off keys.

② Day Key

- When the control is in set clock or set timer modes, pressing the day key will change the set day.

③ Hour Key

- When the control is in set clock or set timer modes, pressing the hour key will change the set hour.

④ Minute Key

- When the control is in the set clock or set timer modes, pressing the minute key will change the set minute.

Other functions

Key Lock

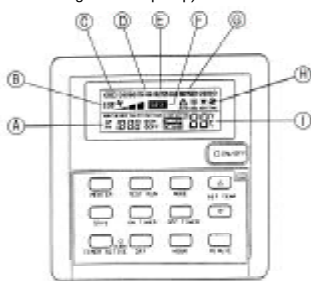
- This feature protects the control from being tampered with by children or unauthorized persons.
- To activate, press the "Minute" key 3 times consecutively. "Key Lock" symbol appears on LCD screen.
- At this time, "On-Off" and Fan keys can be used.
- To cancel this feature, press the "Minute" key 3 times again.

⑤ Timer Hold/Resume Key

- If 7-days timer is set, the word "Timer Active" is displayed.
- To clear the timer setting, press and hold the Timer Hold Key until the word "Timer Active" is no longer displayed.
- To resume the timer setting after timers have been placed on hold, press and hold the key until the word "Timer Active" is displayed.

Sequential Controller

(Standard for cooling and heatpump)



Sequential Controller LCD Display

- A : Time display
- B : Error indication
- C : Compressor running display (up to 4 compressors)
- D : Key lock display
- E : Heater display (up to 2 heaters)
- F : Energy saving mode display
- G : Compressor defrost cycle display (up to 4 compressors)
- H : Operation mode display
- I : Temperature set display

1. ON/OFF key

Press once to start the air conditioning unit.

Press again to stop the unit.

The operation lamp next to the key lights up and goes off respectively when the unit is running or not running.

Caution : In the case when the **ON/OFF** key is pressed immediately after the operation is stopped, the unit will not restart until 3 minutes later to protect the compressor.

2. Selecting Operation Mode

Press the **MODE** key to select the type of operating mode. Consecutive press of the key switches the operation over "COOL", "HEAT", "AUTO" and "FAN"

3. SAVE Mode

Press the **SAVE** key to select the energy saving function. This option is only available for "COOL", "HEAT" and "AUTO" modes.

4. Auxiliary Electric Heater

If the "HEAT" mode provides insufficient heating to a room even at the highest temperature setting (30°C), press the **HEATER** key to activate the auxiliary electric heater. For models with two heaters, consecutive press of the key allows the selection of one or both heaters active.

5. Temperature Setting

To set the desired room temperature, press  or  to increase or decrease the set temperature in the range of 16°C to 30°C.

Press both  and  simultaneously to toggle between °C and °F setting.

6. Time Setting

Real time Clock

Press the **CLOCK** key once to activate set clock mode.

Press again to disable set clock mode.

Under set clock mode, the time of the present day can be set by pressing the respective **MINUTE**, **HOURL** and **DAY** key.

7-days timer

Press the **ON TIMER** key to activate auto-ON timer mode. Under this mode, press the respective **MINUTE**, **HOURL** and **DAY** key to select the time of the week when the air-conditioning unit is to automatically start running. Press the **ON TIMER** key again to save the setting.

Press the **OFF TIMER** key to activate auto-OFF timer mode. Under this mode, press the respective **MINUTE**, **HOURL** and **DAY** key to select the time of the week when the air-conditioning unit is to automatically stop running. Press the **ON TIMER** key again to save the setting.

Then to activate the 7-days timer, press and hold the **TIMER ACTIVE** key until the word "TIMER ACTIVE" appears on the LCD screen. Repeat the same step to disable the 7-days timer.

7. Other Function

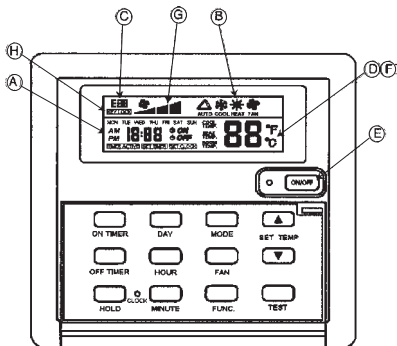
Key Lock

Press the **MINUTE** key 3 times consecutively to activate the key lock. A "KEY LOCK" symbol will appear on the LCD screen. At this point, only the **ON/OFF** key is valid. To disable the key lock, again press the **MINUTE** key 3 times consecutively.

Test run

Press the **TEST** key 2 times consecutively to test run the unit.

PAC-204RC Controller



For purposes of explanation, all the displays on this page are shown in their lit condition. This configuration does not occur in the actual unit.

- | | |
|---|---|
| <p>A [Current/start/ending time] Display</p> <p>B Operation mode
Displays the status of operation.</p> <p>C [Checking] Display
This display appears when abnormality occurs in the unit.</p> <p>D [Set temperature] Display
Displays the set temperature.</p> | <p>E [Operation] Lamp
Lights up during operation, goes off during stop.</p> <p>F [Room temperature] Display
Displays the temperature of the air intake during operation.</p> <p>G [Fan speed] Display
To indicate High-speed or Low-speed.</p> <p>H [Key lock] Display
This display appears when key lock function is active.</p> |
|---|---|

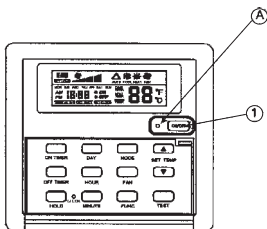
Before starting operation

* Make sure that the power supply is turned ON before use. (Keep the power supply turned ON at all times when the air conditioner is in use. Use of the unit without power can result in compressor failure.)

Warning:

Check and confirm the power circuit before use.

1-1 ON/OFF



Start an operation

- 1 Press the [ON/OFF] button. Operation lamp lights up and operation starts.

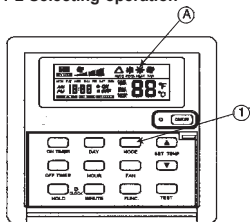
Stop an operation

- 1 Press the [ON/OFF] button again.
Operation lamp goes off and operation stops.
- Once the buttons have been set, pressing of the [ON/OFF] button only can repeat the same operation thereafter.
- During operation, the operation lamp above the [ON/OFF] button lights up.

Caution :

Even if the operation button is pressed immediately after the operation is once stopped, operation is not restarted for about 3 minutes. This function protects the machine. It automatically starts operation after the lapse of approximately 3 minutes.

1-2 Selecting operation



When selecting operation

- 1 Press the [MODE] button.
Consecutive press of the [MODE] button switches the operation over to "FAN" and "COOL".
For the contents of operation, check the display.

For fan

Press the [MODE] button and bring up the "FAN" display.

- The fan operation functions to circulate the air in the room.
- The temperature of the room cannot be set by fan operation.

Operation mode display

Caution:

Never expose your body directly to cool air for a long time. Excessive exposure to cool air is bad for your health, and should therefore be avoided.

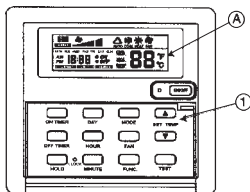
For cooling

Press the [MODE] button and bring up the "COOL" display.

Caution:

- When the air conditioner is used together with burners, thoroughly ventilate the area. Insufficient ventilation can result in accidents due to oxygen deficiency.
- Never place a burner at a place where it is exposed to the airflow from the air conditioner. Doing so can result in imperfect combustion of the burner.

1- 3 Room temperature adjustment



- Ⓐ Set temperature display and room temperature display

To change room temperature

- ① Press the room temperature button and set the room temperature of your choice.

Press or once changes the setting by 1°C.

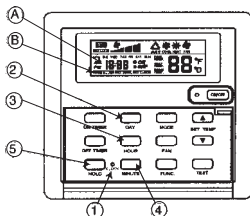
If the pressing is continued, the setting continues to change by 1°C.

* Indoor temperature can be set within the following range. Cooling 19 ~ 30°C

* It is impossible to set the room temperature by the air-blow operation.

- ① Press and together, the unit of temperature change "°C" (degree-centigrade) and "°F" (degree-Fahrenheit)

1- 4 Time setting



- Ⓐ Current time display
Ⓑ Timer Hold/Resume display

Clock key

- ① Press the key one time will activate set clock mode.

Press the key again will disable set clock mode.

- ② ~ ④ Under set clock mode, the real time clock and present day setting can be changed by pressing Day key,

Hour key or Minute key.

7-Days timer key

- ① There are two keys for timer. One is ON Timer, another is Off Timer.

Press the key one time will activate set timer mode.

Press the key again will disable set timer mode.

- ② ~ ④ Under set timer mode, the 7-days timer setting can be changed by pressing Day key, Hour key or Minute key.

Day key

- ② During set clock mode or set timer mode, press the key will change the day setting.

Hour key

- ③ During set clock mode or set timer mode, press the key will change the hour setting.

Minute key

- ④ During set clock mode or set timer mode, press the key will change the minute setting.

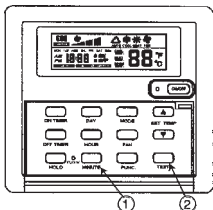
Timer Hold/Resume key

If 7-days timer is set, then the word "Timer Active" is displayed.

- ⑤ To clear all the timers setting, Press and hold the hold key until the word "Timer Active" is not displayed.

To resume the timer setting after timers have been held, press and hold the key until the word "Timer Active" is displayed.

1- 5 Other function



Key lock

- ① Press the "MINUTE" key three times consecutively, "KEY LOCK" symbol will appear on LCD screen. At this time, only "ON-OFF" key is valid. This function purpose is protect from mischief of child etc.

To cancel the key lock function, Please press "MINUTE" key three times consecutively again.

Test run

- ② Press the "TEST" key two times consecutively. The unit will run and finished automatically after two hours.

6. Self Diagnosis Table

A. WALL MOUNTED COOLING SERIES

Model

WM 10/15/20/25 F

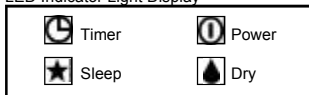
Board

C5

Handset

G8

LED Indicator Light Display



Self Diagnosis Table

 POWER	 SLEEP	 TIMER	 DRY	Operation / Faulty Indication
☐		☐		Timer on
☐	☐			Sleep mode on
☐			☐	Dry mode
☒ Continuously			☐ / ☒	Frost prevention mode
☒ Once every 2 sec				Room air sensor contact loose / short
☒ ☒ Twice every 2 sec				Indoor coil sensor contact loose / short
☒ ☒ ☒ 3 time every 2 sec				Outdoor abnormal operation

☐ ON

☐ / ☒ ON or OFF

☒ BLINKING

B. WALL MOUNTED HEATPUMP SERIES

Model

WM 10/15/20/25 FR

Board

C2.4

Handset

G8

LED Indicator Light Display

	Cooling Mode (Green)		Dry Mode (Orange)
	Heat / Fan Mode (Red/Green)		Sleep Mode (red)

Self Diagnosis Table

					Operation / Faulty Indication
COOL	DRY	FAN	HEAT	SLEEP	
○				○ / ●	Cooling mode
	○				Dry mode
		○			Fan mode
			○	○ / ●	Heat mode
●			○	○ / ●	Auto mode in heating operation
			●	○ / ●	Auto mode in cooling operation
○			●		Defrost operation
●					Controller overload protection / gas not enough
				●	Indoor coil sensor contact loose / short
	●				Outdoor coil sensor contact loose / short
		●			Room air sensor contact loose / short
●	●				If the system is in auto or sleep mode, switch to heat or cool mode and turn off the sleep function, turn off the power supply to reset the system, wait for 3 minutes and on the system
●	●				again If the system is in cool or heat mode (with the sleep function off), the sensor may have contact problem, compressor overload protection trip or outdoor abnormal operating condition.

○ ON

○ / ● ON or OFF

● BLINKING

C. CEILING EXPOSED COOLING / HEATPUMP SERIES - WIRELESS CONTROL

Model

CE 20/25/30/40/50 D/DR

Board

C3.0B

Handset

G8

Cooling : LED Indicator Light Display



Heatpump : LED Indicator Light Display



Self Diagnosis Table

COOL	DRY/ TIMER	FAN/ POWER	HEAT	Operation / Faulty Indication
○ / ●	○ / ●	○	○ / ●	Power on
		●		Room sensor contact loose / short
	●			Outdoor coil sensor contact loose / short
●	●			Gas leak
●				Compressor overload
			●	Outdoor defrost

○ ON

○ / ● ON or OFF

● BLINKING

D. CEILING CASSETTE COOLING / **HEATPUMP SERIES - WIRELESS CONTROL**

Model

CK 20/25/30/40/50 A/AR

Board

C3.0A

Handset

G8

Cooling : LED Indicator Light Display



Heatpump : LED Indicator Light Display



Self Diagnosis Table

COOL			HEAT			Operation / Faulty Indication
POWER	TIMER	SLEEP	POWER	TIMER	HEAT	
○	○ / ●	○ / ●	○	○ / ●	○ / ●	Power on
	●			●		Room / Indoor / Outdoor (for heatpump) coil sensor contact loose / short
●			●			Gas leak faulty / Compressor overload
●	●		●	●		Condensate water overflow / Pump error
					●	Outdoor defrost (for heatpump only)

○ ON

○ / ● ON or OFF

● BLINKING

E. C3 CONTROLLER WITH SLM WIRED HANDSET

Model

CK 20 - 50 A/AR
CE 20 - 50 D/DR
CC 10 - 60 C/CR

Board

C3A
C3B
C3B

Handset

SLM2 - 10 WIRE
SLM2 - 10 WIRE
SLM2 - 10 WIRE

COOLING ONLY MODEL

HIGH FAN	MED. FAN	LOW FAN	COOL	SLEEP	TIMER	Operation / Faulty Indication
		●				Room sensor contact loose / short
	●					Indoor coil sensor contact loose / short
●						Outdoor coil sensor contact loose / short
				●		Gas leak
			●			Compressor overload
					●	Candensate water overflow / *pump error

* For CK model only

○ ON

○ / ● ON or OFF

● BLINKING

HEATPUMP MODEL

HIGH FAN	MED. FAN	LOW FAN	COOL	SLEEP	TIMER	HEAT	Operation / Faulty Indication
		●					Room sensor contact loose / short
	●						Indoor coil sensor contact loose / short
●							Outdoor coil sensor contact loose / short
				●			Gas leak
			●				Compressor overload
					●		Candensate water overflow / *pump error
						●	Outdoor defrost

* For CK model only

○ ON

○ / ● ON or OFF

● BLINKING

NOTE : Refer to the SLM Remote Control Operation Guide For LED Display.

F. WALL MOUNTED COOLING SERIES

- AUTO RANDOM RESTART

Model

WM 10/15/20/25 F

Board

D2.0

Handset

G8

LED Indicator Light Display

 Timer	 Power
 Sleep	 Dry

Self Diagnosis Table

 POWER	 SLEEP	 TIMER	 DRY	Operation / Faulty Indication
○ / ●		○		Timer on
○	○			Sleep mode on
○			○	Dry mode
○			○ / ●	Frost prevention mode
 Once every 2 sec				Room air sensor contact loose / short
 Twice every 2 sec				Indoor coil sensor contact loose / short
 3 time every 2 sec				Gas leak

○ ON

○ / ● ON or OFF

● BLINKING

G. WALL MOUNTED HEATPUMP SERIES

- AUTO RANDOM RESTART

Model

WM 10/15/20/25 FR

Board

U1.4

Handset

G8

LED Indicator Light Display

	Cooling Mode (Green)		Dry Mode (Orange)
 / 	Heat / Fan Mode (Red/Green)		Sleep Mode (red)

Self Diagnosis Table

					Operation / Faulty Indication
COOL	DRY	FAN	HEAT	SLEEP	
☐				☐ / ☒	Cooling mode
	☐				Dry mode
		☐			Fan mode
			☐	☐ / ☒	Heat mode
☒			☐	☐ / ☒	Auto mode in heating operation
☐			☒	☐ / ☒	Auto mode in cooling operation
			☒		Defrost operation
☒					Compressor overload protection
				☒	Indoor coil sensor contact loose / short
	☒				Outdoor coil sensor contact loose / short
		☒			Room air sensor contact loose / short
☒	☒				Gas leak

☐ ON

☐ / ☒ ON or OFF

☒ BLINKING

H. WALL MOUNTED INVERTER HEATPUMP UNIT

Model

WMV 10FR/SLV10BR

Board

VA1.0

LED Indicator Light Display

		Cooling / Dry (Green / Red)		Standby / Fan (Red)
		Heat (Red)		Time (Green)

Self Diagnosis Table - Indoor LED Display

					Operation / Faulty Indication
COOL	DRY	HEAT	STANDBY	TIMER	
○				○ / ●	Cooling mode
	○				Dry mode
			○		Fan mode
		○		○ / ●	Heat mode
○		○		○ / ●	Auto mode
		●			Defrost operation
●					Compressor overload protection
				●	Indoor coil sensor contact loose / short
		●			Outdoor coil sensor contact loose / short
●			●		Gas leak / compressor overheat
●				●	Communication error between indoor and outdoor
			●	●	Inverter error / PFC error
		●	●		Outdoor total current trip / DC peak

○ ON

○ / ● ON or OFF

● BLINKING

Outdoor Inverter Display Panel

Error Code Display as LED blinking

Code	Error
01	Current transformer error
02	Communication with indoor error
03	Indoor coil sensor error
04	Outdoor coil sensor error
05	Gas leak
06	Coil overload
07	Outdoor air sensor error
08	Compressor discharge sensor error
09	Room sensor error
10	Communication with inverter error
11	PFC error
12	Compressor discharge temperature error
13	Total current overload
14	Inverter DC peak trip (overcurrent)
24	Inverter overvoltage trip
25	Inverter overload trip
26	Inverter overheat trip
27	Inverter CPU error 1
28	Inverter CPU error 2
29	Inverter illegal command in the Master trip
2A	Inverter illegal command in the Inverter trip
2C	Inverter abnormal in the master trip
2E	Inverter external signal trip

Outdoor Board LED

Condition	LED
1. Normal	Always ON
2. Test run mode	Toggle ON/OFF every 1 second
3. Current transformer error	Blink once, OFF 3 seconds
4. Inverter trip (overvoltage, overload, overheat)	Blink twice, OFF 3 seconds
5. PFC error	Blink 3 times, OFF 3 seconds
6. Total current overload	Blink 4 times, OFF 3 seconds
7. Inverter DC peak trip	Blink 5 times, OFF 3 seconds

I. CEILING EXPOSED COOLING / **HEATPUMP SERIES - AUTO RANDOM RESTART**

Model

CE 20/25/30/40/50 D/DR

Board

U1.4

Handset

G8

Cooling : LED Indicator Light Display



Heatpump : LED Indicator Light Display



Self Diagnosis Table

					Operation / Faulty Indication
COOL	DRY	FAN	HEAT	SLEEP	
○				○ / ●	Cooling mode
	○				Dry mode
		○			Fan mode
			○	○ / ●	Heat mode
●			○	○ / ●	Auto mode in heating operation
○			●	○ / ●	Auto mode in cooling operation
			●		Defrost operation
●					Compressor overload protection
					Indoor coil sensor contact loose / short
	●				Outdoor coil sensor contact loose / short
		●			Room air sensor contact loose / short

○ ON

○ / ● ON or OFF

● BLINKING

J. CEILING CASSETTE COOLING / HEATPUMP SERIES - AUTO RANDOM RESTART

Model

CK 20/25/30/40/50 A/AR

Board

U1.4

Handset

G6

Cooling : LED Indicator Light Display

		
POWER	TIMER	SLEEP

Heatpump : LED Indicator Light Display

		
POWER	TIMER	HEAT

Self Diagnosis Table

				Operation / Faulty Indication
POWER	TIMER	SLEEP	DRY	
○	○			Timer on
○		○		Sleep mode on
○			○	Heat mode
● Continuously			○ / ●	Frost prevention mode
● Once every 3 sec				Compressor overload
●● Twice every 3 sec				Pump fault
●●● 3 time every 3 sec				Gas leak
●●●● 4 time every 3 sec				Room / Indoor coil / Outdoor coil sensor contact loose / short

○ ON

○ / ● ON or OFF

● BLINKING

K. AUTO RANDOM RESTART CONTROLLER **WITH SLM WIRED HANDSET**

<u>Model</u>	<u>Board</u>	<u>Handset</u>
CK 20 - 50 A/AR	U1.4	SLM 3 - 4 WIRE
CE 20 - 50 D/DR	U1.4	SLM 3 - 4 WIRE
CC 10 - 60 C/CR	U1.4	SLM 3 - 4 WIRE
SB75 - 150 B/BR	U1SB125	SLM 3 - 4 WIRE
SB75 - 150 D/DR	U1SB125	SLM 3 - 4 WIRE

Cooling / Heatpump Model

Error Code at 7 Segment Display	Operation / Faulty Indication
E1 Blinking	Room Sensor Contact Loose / Short
E2 Blinking	Indoor Coil Sensor Contact Loose / Short
E3 Blinking	Outdoor Coil Sensor Contact Loose / Short
E4 Blinking	Compressor Overload
E5 Blinking	Gas Leak
E6 Blinking	Pump Faulty
Heat LED Blinking	Outdoor Defrost (For Heatpump Only)

L. STATIC DUCTED BLOWER FAN COIL UNIT **HEATPUMP SERIES**

<u>Model</u>	<u>Board</u>	<u>Handset</u>
SB 150B2/BR2 - 600B4/BR4	SQCH	SQ-LCD
SB150D2/DR2 - 500D4/DR4	SQCH	SQ-LCD

When the system is on and an error occurs, the ON/OFF LED on the LCD panel will blink and an error code is shown. When the system is off and there is a thermistor error, the ON/OFF LED is off but the error code is still displayed. Each error code represents different message as below:

Error Code	Operation / Faulty Indication
E01	Require manual reset
E02	Compressor 1 high temperature (overload)
E03	Compressor 2 high temperature (overload)
E04	Compressor 3 high temperature (overload)
E05	Compressor 4 high temperature (overload)
E06	Compressor 1 high pressure trip / contact open
E07	Compressor 2 high pressure trip / contact open
E08	Compressor 3 high pressure trip / contact open
E09	Compressor 4 high pressure trip / contact open
E10	Compressor 1 trip / low R-22 / outdoor abnormal
E11	Compressor 2 trip / low R-22 / outdoor abnormal
E12	Compressor 3 trip / low R-22 / outdoor abnormal
E13	Compressor 4 trip / low R-22 / outdoor abnormal
E14	Room sensor short
E15	Room sensor open
E16	Indoor coil sensor 1 short
E17	Indoor coil sensor 2 short
E18	Indoor coil sensor 3 short
E19	Indoor coil sensor 4 short
E20	Indoor coil sensor 1 open
E21	Indoor coil sensor 2 open
E22	Indoor coil sensor 3 open
E23	Indoor coil sensor 4 open
E24	Outdoor coil sensor 1 short
E25	Outdoor coil sensor 2 short
E26	Outdoor coil sensor 3 short
E27	Outdoor coil sensor 4 short
E28	Outdoor coil sensor 1 open
E29	Outdoor coil sensor 2 open
E30	Outdoor coil sensor 3 open
E31	Outdoor coil sensor 4 open
E32	Compressor 1 de-ice
E33	Compressor 2 de-ice
E34	Compressor 3 de-ice
E35	Compressor 4 de-ice

M. CHILLED WATER FAN COIL SERIES

Model

CK 20 - 50 AW

CE 20 - 50 DW

CC 10 - 60 CW

Board

W1V2

W1V3

Handset

G6 Wireless Controller or

Netware-1 Wired Controller

Self Diagnosis Table

Mainboard : W1V2

Wireless		Wired	Operation / Faulty Indication
Power LED	Other LEDs	7 Segment Display	
Blinks 4 times	Fan blinks	E1 Blinking	Room sensor Contact loose / short
Blinks 4 times	Sleep blinks	E2 Blinking	Indoor coil sensor contact loose / short
Blinks 1 time	Cool blinks	E4 Blinking	Pipe water temperature fault
Blinks 2 times	Cool & Fan blink	E6 Blinking	Pump faulty

Mainboard: W1V3

Wireless		Wired	Operation / Faulty Indication
Power LED	Other LEDs	7 Segment Display	
Blinks 4 times	Fan blinks	E1 blinking	Room sensor contact loose/short
Blinks 4 times	Sleep blinks	E2 blinking	Indoor coil sensor contact loose/short
Blinks 3 times	Cool & dry blink	E4 blinking	Pipe water temperature poor
Blinks 1 times	Cool blinks	E5 blinking	Pipe water temperature fault
Blinks 2 times	Cool & fan blink	E6 blinking	Pump faulty

N. ROOFTOP PACKAGED AIR CONDITIONER

Model

A) RT 80/100/150/200

Board

MECHANICAL

Handset

PAC-204RC

Self Diagnosis Table

7 Segment Display	Operation / Faulty Indication
E01 Blinking	Thermistor Open Circuit
E02 Blinking	Thermistor Open Short
E03 Blinking	External Switch Is Closed

B) RT 150/250/300

SQCH

SQ-LCD

Self Diagnosis Table

Please refer to Page 34

C) RT 60/80/100/120

U1SB125

SLM-3

Self Diagnosis Table

Please refer to Page 33

O. AIR COOLED MINI CHILLER

Model

AC40/50/58A/AR
AC75/100/125B/BR

Board

SZMC01

System Failure Mode

No	Description	Error Code Display	Compressor	Condenser Fan	4WV	Water Pump	LED
1	Compressor overload	CO	X	X	X	O	B
2	Condenser fan overload	CO	X	X	X	O	B
3	Water pump overload	PO	X	X	X	X	B
4	Flow switch	FL	X	X	X	X	B
5	High pressure cut-off	HP	X	X	X	O	B
6	Low pressure cut-off	LP	X	X	X	O	B

X = Stop; O = Run; B = Blink

Error Code

Display	Possible Causes
"CO"	Compressor thermal relay trip Terminal loose
"PO"	Pump thermal relay trip Terminal loose
"FL"	Flow switch connection fault Water flow wrong connection Flow switch fault
"HP"	Discharge pressure high Overcharged Coil dirty Condenser fan fault
"LP"	Suction pressure low Undercharged/leak Water flow rate too low
"E3"	Antifreeze protection activated Water flow rate too low

Model

AC80/100/120/150C/CR

Board

MCH03

Handset

Chiller Panel

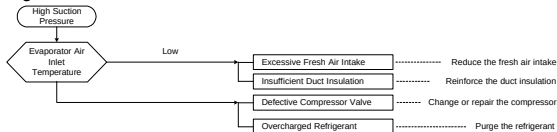
*Error is directly displayed on Chiller Panel's LCD display panel.

7. General Troubleshooting Guide

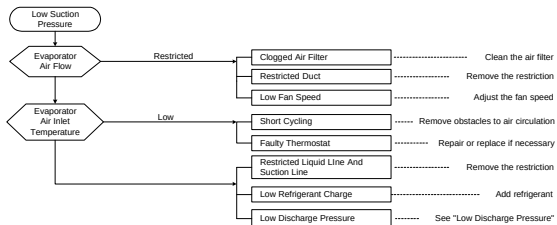
By means of pressure readings

PRESSURE						PROBABLE CAUSE
Data Circuit	TOO LOW	A LITTLE LOW	NORMAL	A LITTLE HIGH	TOO HIGH	
HIGH SIDE LOW SIDE					● ●	1. Overcharged with refrigerant. 2. Non-condensable gases in refrigerant circuit (eg.oil) 3. Obstructed air-intake / discharge. 4. Short circuiting of hot air at condensing unit.
HIGH SIDE LOW SIDE	●				●	1. Poor compression / no compression (compressor defective) 2. Check valve stick in open position. 3. Reversing valve leaking (for heatpump only).
HIGH SIDE LOW SIDE	●	●				1. Undercharged with refrigerant. 2. Refrigerant leakage. 3. Air filter clogged / dirty (indoor unit) 4. Indoor fan locked (cooling) 5. Defective defrost control, outdoor coil freezed up (heating) 6. Outdoor fan locked (heating)
HIGH SIDE LOW SIDE				●	●	1. Outdoor fan blocked (cooling) 2. Outdoor coil dirty (cooling) 3. Indoor fan lock (heating) 4. Indoor filter clogged dirty (heating)
HIGH SIDE LOW SIDE				●	●	1. Air intake temperature of indoor unit too high.

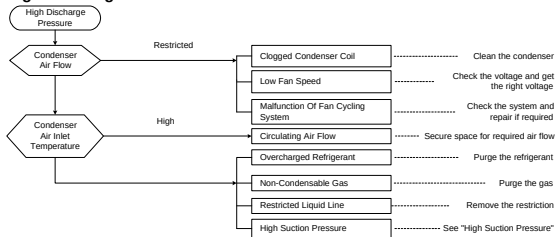
High Suction Pressure



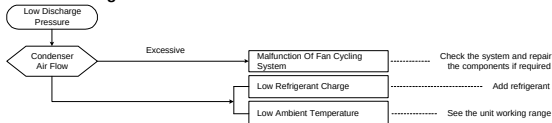
Low Suction Pressure



High Discharge Pressure



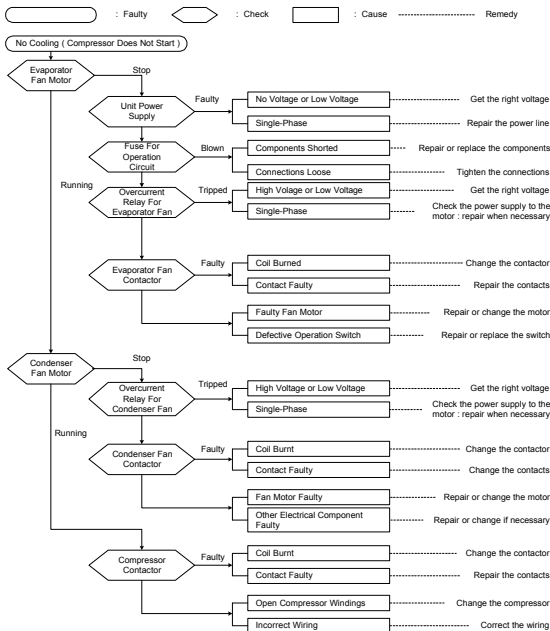
Low Discharge Pressure



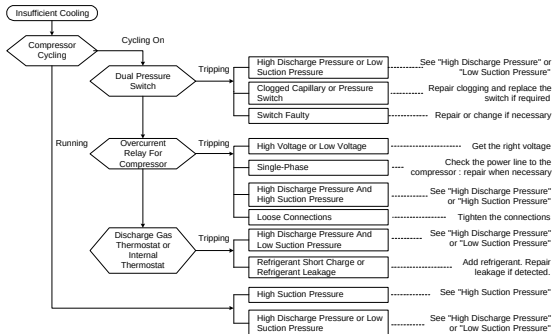
Diagnosis by flow chart (Cooling only)

The following charts are efficient checking procedures for troubleshooting when these fan-coil units are combined with condensing units with the unit standard wiring. For dual circuited models, perform the procedures for each circuit.

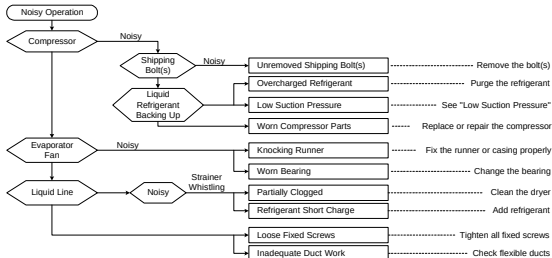
No Cooling



Insufficient Cooling



Noisy Operation



General Trouble Shooting Guide - 1

When any air conditioner malfunction is noted, immediately switch off the power supply to the unit, and contact the local dealer, if necessary. Some simple troubleshooting tips are given below:

Fault	Cause
1. Compressor does not work 3 minutes after starting.	* Protection against frequent starting. Wait for 3 to 4 minutes
2. The unit does not work.	* Power failure or need to replace the fuse * The power plug is disconnected. * It is possible that your delay timer has been set incorrectly. * If the fault persist after the verifications, contact your installer.
3. The air flow is too low	* The air filter is dirty * The door and windows are opened. * The air intake and discharge area are clogged.
4. The remote control light is dim.	* Battery flat. * Batteries are incorrectly inserted or misplaced.
5. Air discharge flow has bad odour	* Odours may be caused by cigarette, smoke particles, perfume etc. which adhere to the coil. * Check if there is any moisture on the wall, garment, and others. * Check the drain pan
6. Condensation on the front panel.	* This is due to air humidity after a long time operation. * The set temperature is too low. Increase the temperature and change it to high fan.
7. Hissing sound during operation.	* Refrigerant flow into evaporator coil.

General Troubleshooting Guide - 2

When any air conditioner malfunction is noted, immediately switch off the power supply to the unit and contact the local dealer, if necessary. Some simple trouble shooting tips are given below :

TROUBLE	PROBABLE CAUSE	SUGGESTED ACTION
1. Fan does not work	1. No power supply 2. Fan capacitor faulty 3. Fan motor faulty 4. Switch Faulty	1. Check power supply 2. Contact local dealer 3. Contact local dealer 4. Change switch
2. Fan work, but compressor does not work	1. Thermostat setting too high 2. Compressor capacitor faulty 3. Compressor faulty 4. Compressor contactor faulty	1. Reset thermostat 2. Contact local dealer 3. Contact local dealer 4. Contact local dealer
3. Both fan and compressor does not work	1. Power failure 2. Starter trip 3. Fuse blown in power switch or operating unit	1. Operate when power supply resume 2. Reset starter 3. Check and replace fuse
4. Air-Conditioner work but cooling not satisfactory	1. Thermostat setting too high 2. Door and/ or windows not closed 3. Condenser coil dirty 4. Some objects blocking the inlet and / or outlet of the unit 5. Refrigerant charge too low	1. Reset thermostat 2. Close door and/ or windows 3. Clean condenser coil 4. Remove the objects 5. Contact local dealer

Mini Chiller: Trouble Shooting Guide

When any malfunction is occurred, immediately switch off the power supply to the unit, and ontact the local dealer, if necessary. Some simple trouble shooting tips are given below.

SYMPTOMS	POSSIBLE CAUSES	REMEDIAL ACTION
1. Compressor does not start	* No powersupply. * Fuses blown or automatic circuit breakdown open * Defective contactor or coil * Unit is stopped because a safety has tripped. * Loose wires * Compressor faulty	* Check power supply * Look for short circuit or grounded wires in motor windings. - Replace fuses and reset circuit breakers when the fault has been corrected. - Check tightness and soundness of all electrical connection. * Repair or replace. * Determine the type of safety shut down and correct the unit is restarted. * Check wire connection and tighten terminal screw * Contact local dealer
2. Fan does not	* No powersupply. * Fan motor faulty	* Check power supply * Contact local dealer
3. Air conditioning does work, but insufficient cooling	* Thermostat setting too high * Condenser coil dirty * Obstacle blocking air inlet or outlet of the unit * Insufficient refrigerant in the system * improper water flow rate * Water in the system is contaminated	* Reset thermostat * Contact local dealer * Remove the obstacle * Contact local dealer * Contact local dealer * Contact local dealer

Mini Chiller: Trouble Shooting With Microprocessor

Error code display at the 7 segment LED:

Symptoms	Possible Causes	Remedial Action
1. PCB display "CO"	* Compressor thermal relay tripped * Terminal loose	* Reset the thermal relay and carefully monitor unit operation when it is restarted * Tighten terminal screws.
2. PCB display "PO"	* Pump thermal relay tripped * Terminal loose	* Reset the thermal relay and carefully monitor unit operation when it is restarted * Tighten terminal screws.
3. PCB display "FL"	* Flow switch connection loose * Water volume too low * Wrong direction of water flow	* Tighten terminal screws. * Add water into the system * Interchange power input phase
4. PCB display "HP"	* Discharge pressure too high * Overcharge * Coil dirty * Condenser fan does not work * Expansion valve stuck in open position	* Reset the pressure switch and observe the unit operation when it is restarted * Contact local dealer * Clean the coil with chemical detergent * Contact local dealer * Replace it
5. PCB display "LP"	* Suction pressure too low * Undercharge * Gas leak * Water flow rate too low	* Reset the pressure switch and observe the unit operation when it is restarted * Contact local dealer * Contact local dealer * Adjust the flow rate
6. PCB display "E3"	* Antifreeze protection activated * Water flow rate too low * Bubble in the heat exchanger	* Check the temperature setting * Adjust the flow rate * Increase the water volume

Roof Top Unit : Trouble Shooting Guide

Before you ask for repair service, check the following points

State of Machine	Switch Box (Field supply)	Cause	Troubleshooting
It does not run	Switch (ON)	Power failure The power supply is turned OFF The fuse in the power supply is gone The earth leakage breaker is gone The wiring phase of power supply is mistaken	Press the switch (ON) button after power restoration Turn the power supply ON Replace fuse Put in the earth leakage breaker. Modify the wiring phase of power supply
Air flows out but it does not cool enough	Switch (ON)	Improper temperature adjustment The filter is filled with dust and dirt. There are some obstacles at the air inlet and outlet of the units Windows and doors are open	After checking the set temperature and inlet temperature adjust thermostat (23WA) Clean up the filter Remove the obstacle Close the windows and doors
Cool air does not come out	Switch (ON)	The restart-preventing circuit is in operation for 3 minutes	Wait for a while (To protect the compressor, a 3-minute restart-preventing circuit is built into the unit. Therefore, there are occasions sometimes when the compressor does not start running immediately. There are cases when it does not run for as long as 3 minutes.)
Fan runs but compressor does not run		The set temperature of thermostat is excessively high for cooling The room temperature is excessively low for cooling	For temperature control, decrease the set temperature at cooling. Can not be operated as it is out of temperature control range.
Compressor run but stops immediately		Air outlet and inlet are blocked	Remove blocking matter
Water or steam is discharged from the unit.		At cooling, water which places to cooling piping and piping connection part drops	It is not a breakdown. Please use it as it is

Roof Top Unit : Troubleshooting for optional Global Remote Controller

Before you ask for repair service, check the following points

State of Machine	Remote Controller (Special Order)	Cause	Troubleshooting
It does not run	"ON-OFF" display is not light up. No display appears even when the (ON/OFF) button is pressed	Power failure The power supply is turned OFF The fuse in the power supply is gone The earth leakage breaker is gone The wiring phase of power supply is mistaken	Press the switch (ON) button after power restoration Turn the power supply ON Replace fuse Put in the earth leakage breaker. Modify the wiring phase of power supply
Air flows out but it does not cool enough	The liquid crystal display shows that it is in the state of operation	Improper temperature adjustment The filter is filled with dust and dirt. There are some obstacles at the air inlet and outlet of the units Windows and doors are open	After checking the set temperature and inlet temperature adjust thermostat (23WA) Clean up the filter Remove the obstacle Close the windows and doors
Cool air does not come out	The liquid crystal display shows that it is in operation	The restart-preventing circuit is in operation for 3 minutes	Wait for a while (To protect the compressor, a 3-minute restart-preventing circuit is built into the unit. Therefore, there are occasions sometimes when the compressor does not start running immediately. There are cases when it does not run for as long as 3 minutes.)
Fan runs but compressor does not run		The set temperature of thermostat is excessively high for cooling The room temperature is excessively low for cooling	For temperature control, decrease the set temperature at cooling. Can not be operated as it is out of temperature control range.
Compressor run but stops immediately		Air outlet and inlet are blocked	Remove blocking matter
Water or steam is discharged from the unit.		At cooling, water which places to cooling piping and piping connection part drops	It is not a breakdown. Please use it as it is

8. Modification to Auto Restart

Auto Restart Feature

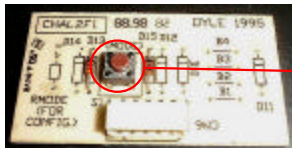
Modification on controller board to have unit restart after power failure at default setting:

	<u>Indoor Temp.</u>	<u>Set Temp.</u>	<u>Fan Speed</u>	<u>Mode</u>
Cooling model	All Temp.	24°C	High	Cool
Heatpump model	> 20°C	24°C	High	Cool
	≤ 20°C	20°C	High	Heat

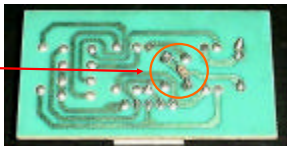
1) WM 10/15DR & WM 20/25CR :

a) For challenger C2.2 PCB,

To add a 10k Ohm 5% Carbon, 1/4 W or higher resistor diagonally at S1 On/Off Switch Board "CHAL2F1"



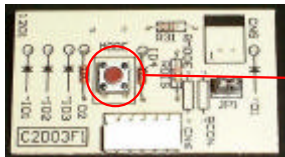
Front View



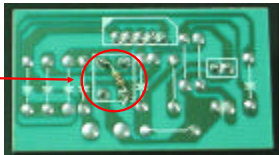
Reverse View

b) For challenger C2.4 PCB,

To solder a 10k Ohm 5% Carbon, 1/4 W or higher resistor diagonally at S1 On/Off Switch Board "C2D03F1"



Front View

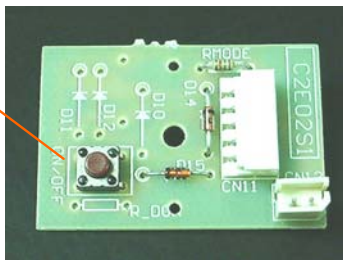


Reverse View

II) WM 10ER :

For Challenger C2.4 PCB

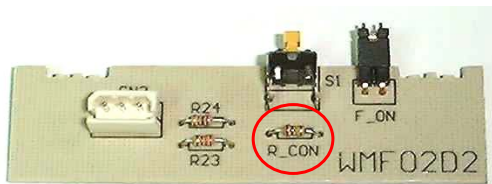
To add a 10k Ohm 5% Carbon, 1/4 W or higher resistor diagonally at S1 On/Off Switch Board "C2E02S1"



III) WM 10/15/20/25 FR :

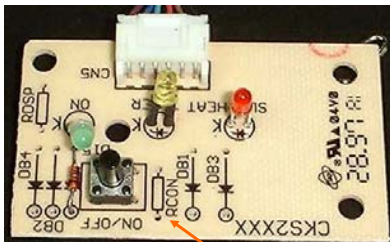
For Challenger C2.4 PCB

To solder a 10k Ohm resistor at R_CON located at the "WMF02D2"



IV) C3A & C3B Board Wireless Controller:

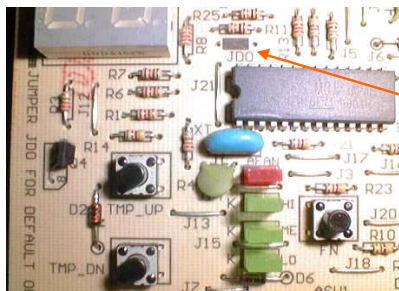
To solder a 10kOhm resistor across "RCON" located on the On/Off switch board "CKS2XXX" for C3A board and "03DCEDX" for C3B board



RCON

V) SLM Wired Controller for C3A & C3B Board :

To solder a jumper wire across "JDO" on the main board of the SLM wired controller.



"JDO" jumper

9. Auto Random Restart Controller

I) Auto Random Restart Selection

Auto restart at the last state memory setting:

- Shorted at JH/JP1 jumper at main board for auto restart (supplied);
- Remove the jumper to have non-auto restart.

**WM-F Series
(D1.7 Board)**



**WM-FR Series
(U1.3 Board)**



**Other Model
(U1.4 Board)**



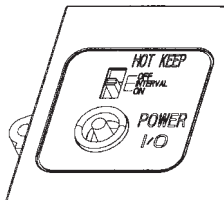
II) Hot Keep Selection

Three selection available:

- Fan stop if indoor coil temperature $< 30^{\circ}\text{C}$ (OFF);
- Fan runs at low speed if indoor coil temperature $< 30^{\circ}\text{C}$ and stop if indoor coil temperature $< 18^{\circ}\text{C}$ (ON);
- Cycle of low fan running for 30 seconds and fan off for 120 seconds and repeat (INTERVAL).

WM-F/FR (U1.3 Board)

3 selection available at the slide switch on the On/Off Switch board; Preset at OFF.



10. Controller Configuration

A) Sequential Controller

It is allowed to configure the controller to suit individual's need with details below :

Model Selection

1. Number of Compressor

The control can be configured into 4 main types base on number of compressors.

By changing "R42" values :

Item	Type	R value
1	Single Compressor	3k
2	2 compressors	7.5k
3	3 compressors	22k
4	4 compressors	OPEN

2. Models

For each type, there are 3 models for the control to configure into.

	<u>Dip switch 1</u>	<u>Dip switch 2</u>	<u>Dip switch 5</u>
a. Cooling (SQCn)	off	off	off
b. Heatpump + no heater (SQHn0)	on	off	off
c. Heatpump + 1 heater (SQHn1)	off	on	off
d. Heatpump + 2 heater (SQHn2)	on	on	off
e. Auto heatpump + no heater (SQHn0)	on	off	on
f. Auto heatpump + 1 heater (SQHn1)	off	on	on
g. Auto heatpump + 2 heater (SQHn2)	on	on	on

n denotes number of compressor(s).

where the postfix number indicates number of compressor(s).

3. Stage Differential Temperature

Differential temperature is the temperature difference between turning on or off 1 compressor to another compressor in thermostat cycle.

The stage differential temperature can be selected from the range shown below :

	<u>Dip switch 3</u>	<u>Dip switch 4</u>
a. Default	off	off
b. 0.5°C	on	off
c. 1.0°C	off	on
d. 1.5°C	on	on

note that 1.5°C only valid for 2 and 3 compressors model. For 4 compressors model, maximum allowed is 1.0°C.

The default differential temperature is base on number of compressor model, the setting is as below :

<u>Model</u>	<u>Diff. Temperature</u>
1 compressor	Not applicable
2 compressor	0.5°C
3 compressor	1.0°C
4 compressors	1.5°C

4. Hot Keep Option

	<u>Dip switch 6</u>
a. Fan off	off
b. Fan on	on

5. Operating Modes

The system has 4 operating modes to select with respect to each model selection:

<u>Model</u>	<u>Auto</u>	<u>Cool</u>	<u>Heat</u>	<u>Fan</u>	
SQCn	-	X	-	X	
SQHnh	-	X	X	X	(Dip switch 5 = off)
SQHnh	X	X	X	X	(Dip switch 5 = on)

Where x denotes modes available
 n = number of compressor(s)
 h = number of heater(s)

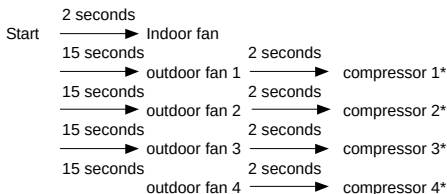
6. Last Memory Functions

The power up settings for either with or without the last memory backup is based on the JH1 setting.

	<u>JH1 Setting</u>
a. Last memory backup	JH1 Plugged
b. Without last memory backup	JH1 Removed

7. Sequential Control For Cool Mode

The starting sequence for indoor fan, outdoor fan and compressors is shown as below:

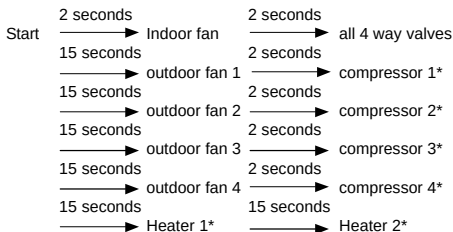


* if available and applicable

The compressors will be turned on one by one depending on the on/off conditions shown in the above

8. Sequential control for heat mode

The starting sequence for indoor fan, outdoor fan and compressors is as shown below :



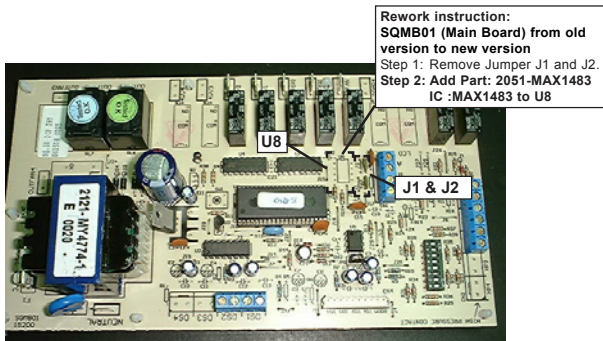
* if available and applicable

The compressors will be turned on one by one depending on the on/off conditions shown in the above.

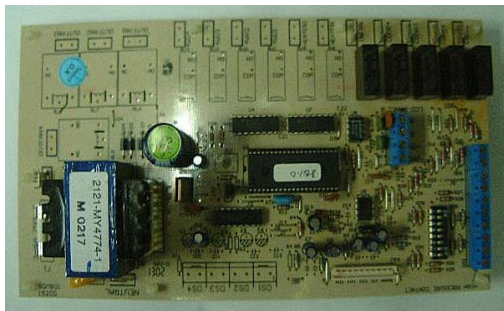
9. Conversion from Old Sequential Board to New Sequential Board

(For wiring up to 1000 metres)

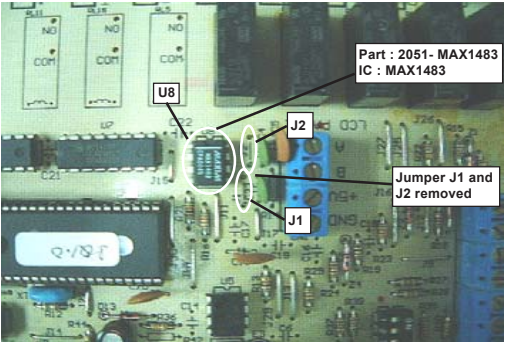
9.1 Sequential Main Board SQMB01(Old Version)



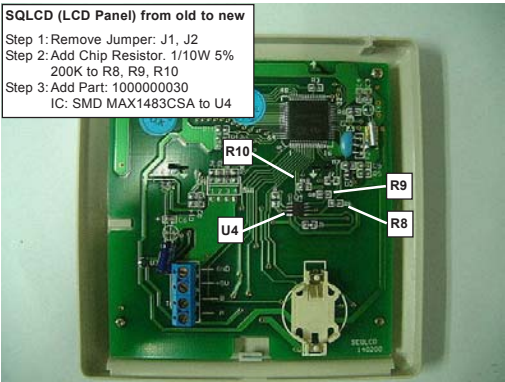
9.2 Sequential Main Board SQMB01 (New Version)



9.3 Sequential Main Board SQMB01 (New Version)



9.4 Sequential LCD Panel SQLCD (New Version)



B) W1V2 - Chilled Water Fan Coil Unit

Mode Selection

Modes	Cool	Dry	Heat	Fan	OD
Heatpump, AP	X	X	X	X	Shorted
Cooling, EC	X	X	-	X	Open



Last Setting Memory Backup

By removing the jumper at JH on the main board.

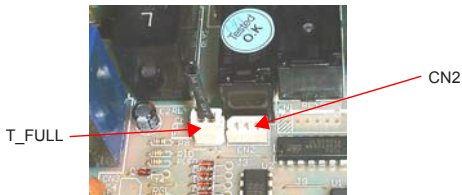
Wiring Connection

CN4 : To connect to Nware-1 controller (Wired-3 way wire)

CN6 : To connect to LED display (Wireless G6 application)

CN2 : To connect to twin motor board (if required)

T_FULL : To connect to level switch (for Ceiling Cassette only)



Note :

Only one application either wired or wireless control at one time.

C) W1V3 - Chilled Water Fan Coil Unit

The Standard Board (W1V3) comes with a VALVE jumper. The system can be configured as the jumper selection listed below:

	VALVE Jumper	HEAT Jumper
Heatpump Mode & Valve Application	✓	✓
Heatpump Mode & Valveless Application	✗	✓
Cooling Mode & Valve Application	✓	✗
Cooling Mode & Valveless Application	✗	✗

✓ : Jumper Remained

✗ : Jumper Removed

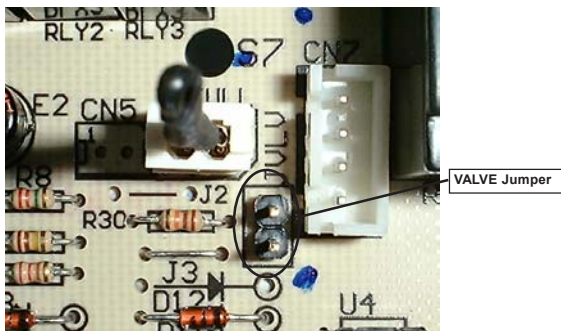
VALVE & HEAT Jumper Location

Model: WM 05-25FW

1. VALVE jumper is plugged into JVLV connector on the emergency switchboard.
2. Heat jumper is plugged into JMODE connector on the emergency switchboard.

Model: CK 20-50AW, CK 15-30BW, CE 20-50DW and CC 10-60CW

1. VALVE jumper is plugged into JVLV connector on the main board.
2. HEAT jumper is plugged into OD connector on the main board.



D) Netware-1 Controller

Feature : Dip Switch Setting for Model Selection

Pin	Function	Remarks	Model
JH & JD	COOL, DRY, FAN	JH - OFF; JD - ON	Cooling only
	COOL, DRY, FAN, HEAT	JH - ON; JD - ON	Heatpump
RTC	No real time clock	RTC-OFF	
	Real time clock	RTC-ON	
NO DRY	With Dry function	NO DRY - ON	
	Dry function	NO DRY - OFF	

E) Air Cooled Mini Chiller

Entering Water Temperature

Mode	Factory Setting
COOL	12°C
HEAT	40°C

SW2 Factory Setting (for COOL mode)

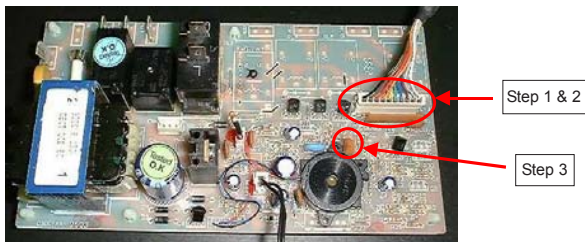
Set Temp. °C	SW2		
	SW2-3	SW2-2	SW2-1
Set by VR3	0	0	0
3	0	0	1
4	0	1	0
5	0	1	1
6	1	0	0
7	1	0	1
8	1	1	0
9	1	1	1

1=ON; 0=OFF

If the DIP switch setting is set to (0,0,0), the set temperature will be determined by the VR3 setting. Otherwise, the setting will override the VR3 setting.

F) Work Instructions

Conversion of C3 Board from LCD Wireless Control to SLM Wired Control



Step 1 : Remove the LED Display hardness wire from the connector CN3;

Step 2 : Connect the SLM handset wire connector to CN3
(Ensure the wire is 10 core wire);

Step 3 : Cut off a capacitor at C6 as highlighted.

Step 4 : Reset the unit.